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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,172

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EXAMINER

FOGARTY, CAITLIN ANNE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,172	Applicant(s) ZULEHNER ET AL.	
	Examiner CAITLIN FOGARTY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/22/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1 – 13 are pending and are presented for this examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) was submitted on March 22, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The disclosure is objected to because of the following informalities: the last paragraph of p. 3 of the specification recites "the outer nozzle pipe 15 is made of stainless steel..." This is a typographical error and should be replaced with "the outer nozzle pipe 19 is made of stainless steel..."

Appropriate correction is required.

Claim Objections

5. Claim 1 is objected to because of the following informalities: The parentheses around "outer nozzle pipe" should be removed in order to clarify whether the contents within the parentheses are a further claim limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 12 recites the limitations "the inner nozzle pipe" in lines 2 and 5 and "the outer nozzle pipe" in line 4. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 – 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wells et al. (US 5,371,759).

With respect to instant claim 1, col. 4 lines 47-62, col. 5 lines 2-39, col. 6 lines 8-28, Fig. 1, and Fig. 2 of Wells disclose a nozzle element for introducing gas into an industrial furnace for melting metals. The nozzle element of Wells has the following features:

- a) a nozzle body (31) made of refractory material;
- b) a metal jacket (41) covering the refractory material on the cold side (see Fig. 1) of the nozzle body (31);

- c) heat-conducting elements (18 and see Fig. 2) which are in contact with the metal jacket (41) and extend into the refractory material;
- d) the metal jacket (41) is coolable (see col. 4 lines 40-46);
- e) a nozzle pipe (outer nozzle pipe-23) which extends through the metal jacket (41) and the nozzle body (31) from the cold side to the hot side of the nozzle body (see Fig. 1).

In regards to instant claims 2 and 3, col. 6 lines 8-28 teach that the metal jacket (41) and the heat-conducting elements (18 and see Fig. 2) are all made of steel.

Regarding instant claim 4, col. 4 line 63-col. 5 line 7 and Fig. 2 of Wells disclose that the heat-conducting elements (18) are arranged in the nozzle body refractory material (31) in a distributed array over the cross-section, for example along concentric rings. Therefore, the heat-conducting elements (18) are arranged essentially in a ring-like pattern around the outer nozzle pipe (23).

With respect to instant claim 5, Fig. 2 of Wells teaches that the heat-conducting elements (18) are provided in the form of rods.

In regards to instant claims 6 – 8, col. 4 lines 40-46 and Fig. 2 of Wells disclose that the metal jacket (41) can be cooled by a cooling medium. A cooling fluid can be supplied to the space (19) by way of an inlet (channel-shaped device-20) where the fluid is passed over the surface of the metal jacket (41).

Regarding instant claims 9 and 10, col. 4 lines 47-62 and Fig. 2 of Wells teach that an inner nozzle pipe (21) is displaceably arranged in the outer nozzle pipe (23) along its longitudinal axis and is at a distance from it.

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In regards to instant claim 13, col. 4 lines 8-31 and 47-55 and Fig. 1 of Wells teach that the nozzle element is arranged in the outside wall of an industrial furnace.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al. (US 5,371,759) as applied to claim 10 above, and further in view of Wells et al. (US 5,465,942-hereafter US '942).

Wells differs from instant claim 11 because it does not teach that the inner nozzle pipe (21) and the outer nozzle pipe (23) are held at a distance from one another by spacers. However, col. 1 lines 9-12, col. 4 lines 2-24, 51-55, and Fig. 1 of US '942 disclose a nozzle element for introducing gas into an industrial furnace for melting metals. The nozzle element has a similar structure to that of the instant invention and has an inner nozzle pipe (7) arranged inside and at a distance from an outer nozzle pipe

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(6). The inner nozzle pipe (7) is held by spacers at a spacing within the outer nozzle pipe (6) forming an annular gap (9). It would have been obvious to one of ordinary skill in the art to incorporate the spacers of US '942 between the inner and outer nozzle pipes of Wells in order to maintain the desired gap between the inner and outer nozzle pipes.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al. (US 5,371,759) as applied to claim 1 above, and further in view of Raskin (US 2,933,259).

Wells differs from instant claim 1 because it does not teach that the outer circumferential surface of the inner nozzle pipe (21) has a thread which engages in an inside thread arranged on the surface of the outer nozzle pipe (23) facing the inner nozzle pipe (21). However, col. 5 lines 1-20 and Fig. 7 of Raskin teach a nozzle element for introducing gas into an industrial furnace for melting metals. The nozzle element of Raskin has an inner nozzle pipe (49) arranged inside and at a distance from an outer nozzle pipe (47). The outer circumferential surface of the inner nozzle pipe (49) has a thread which engages in an inside thread arranged on the surface of the outer nozzle pipe (47) facing the inner nozzle pipe (49). It would have been obvious to one of ordinary skill in the art to incorporate the threads on the inner and outer nozzle pipe of Raskin with the nozzle element of Wells in order to maintain the position of the inner and outer nozzle pipes and to ease the detachment of the inner nozzle pipe from the outer nozzle pipe.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF